



# When one valve isn't good enough

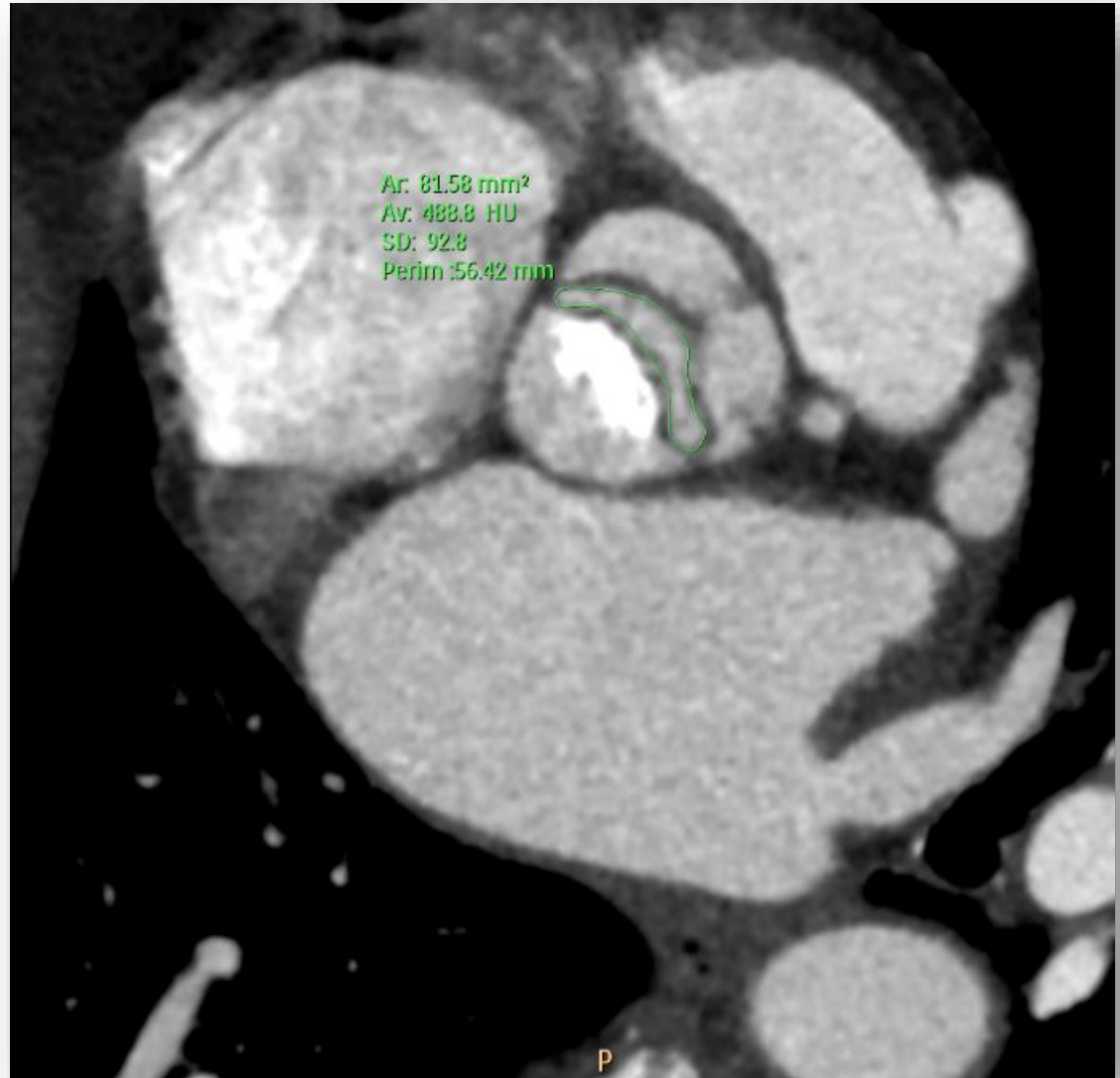
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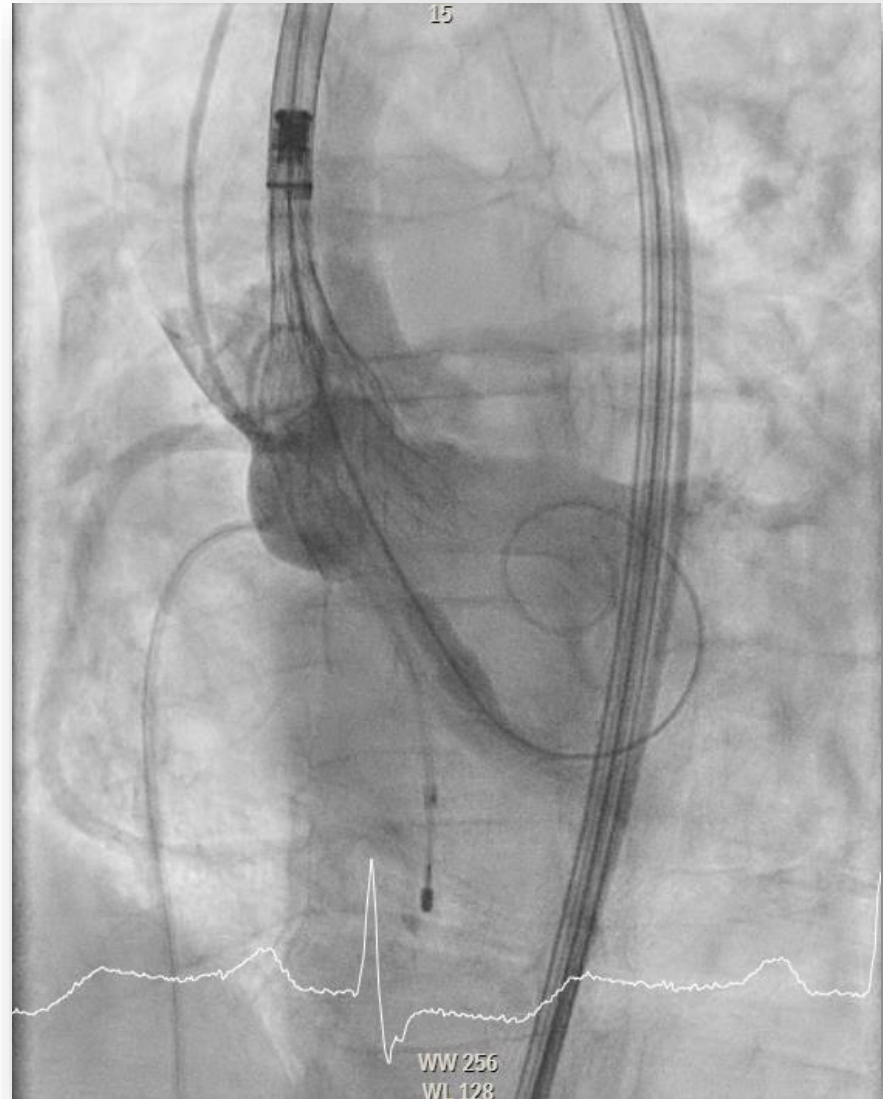
- 73 year old Maltese female
- Symptomatic severe aortic stenosis
- Worsening dyspnoea on mild exertion
- Hypertensive, on thiazide diuretic
- TTE:
  - Heavily calcified aortic valve
  - Aortic valve area  $0.5\text{cm}^2$
  - Maximum velocity  $550\text{cm/second}$
  - Mean pressure gradient  $68\text{mmHg}$
  - Normal left ventricular systolic function
- Normal coronaries on angiogram
- Patient refused surgical AVR and accepted TAVI

- Bicuspid aortic valve (Sievers classification type 1 R-L)
- Severe calcification of leaflets and annulus
- Calcified plaque near ostium of left main stem
- Height LCA ostium 10.4mm
- Height RCA ostium 15.7mm



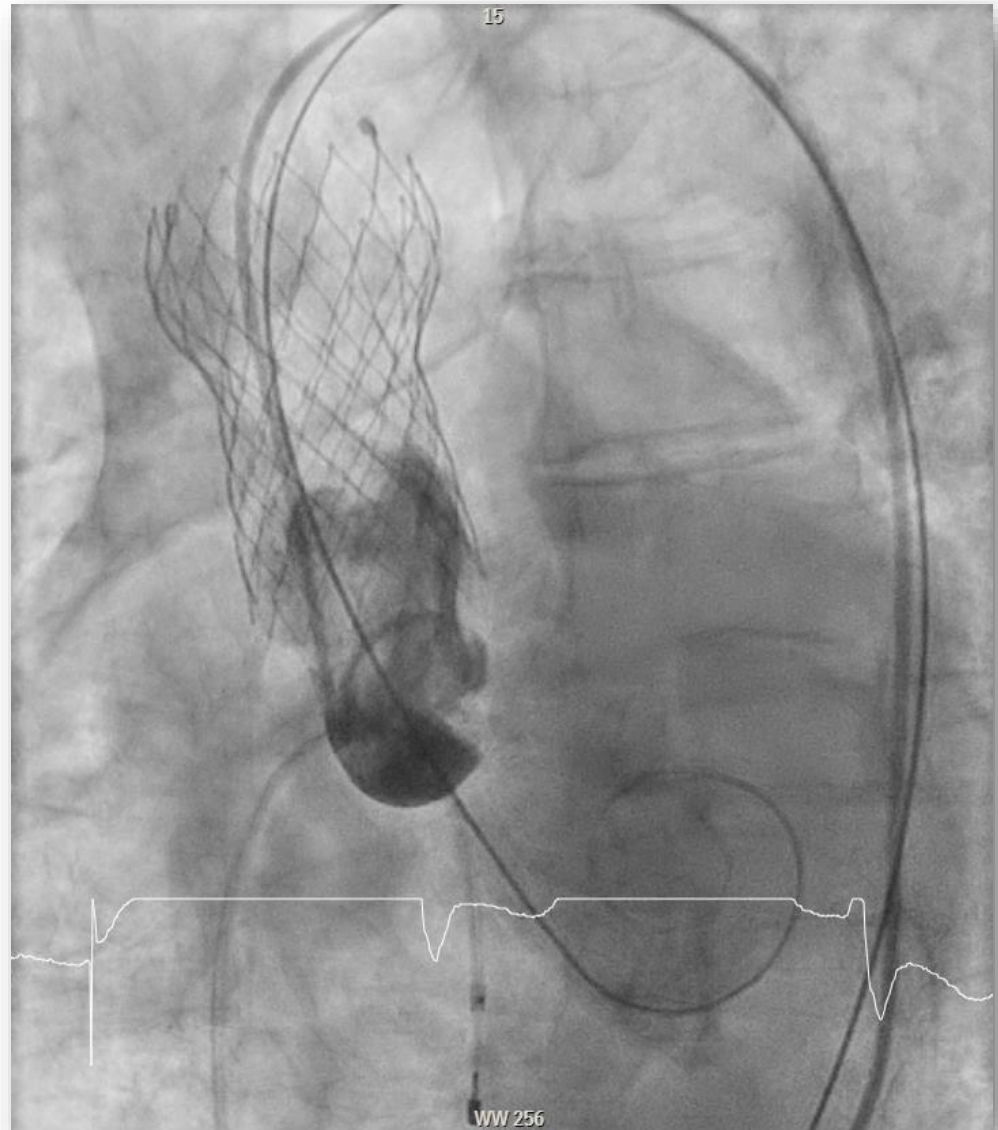
Transfemoral TAVI  
under deep  
sedation

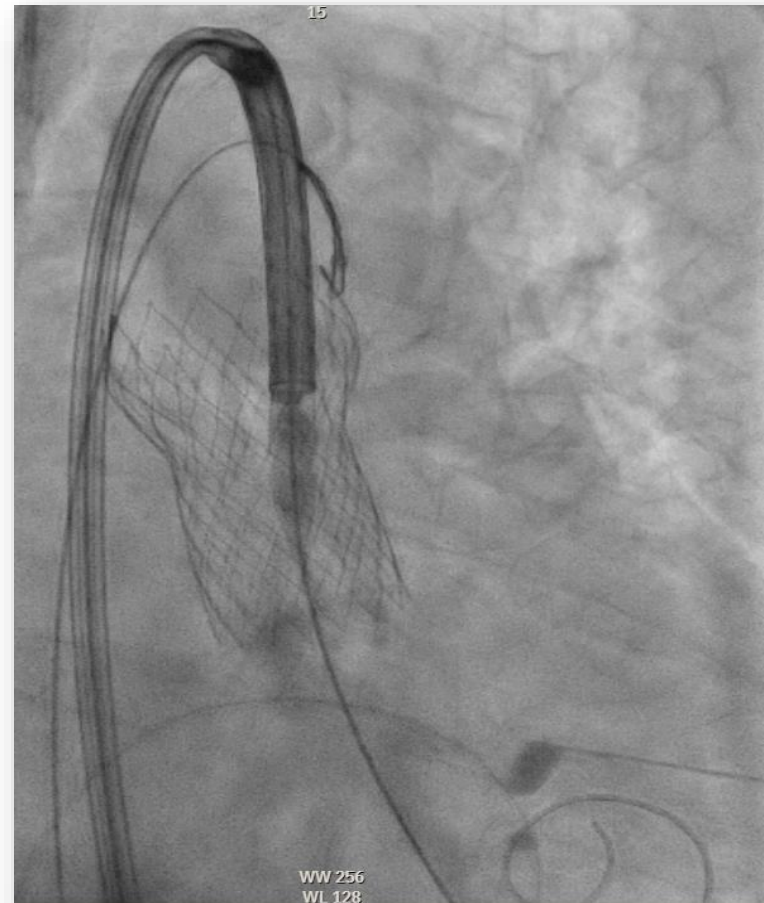
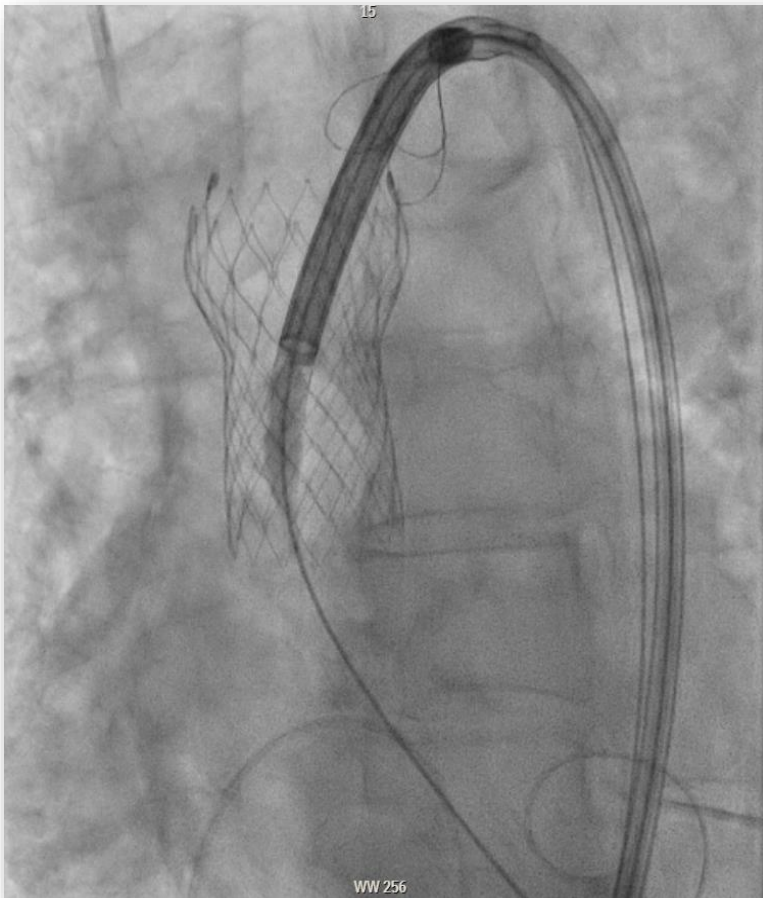
26mm CoreValve  
Evolut R device  
position prior to  
deployment



TAVI device popped up into ascending aorta immediately after deployment

Severe aortic regurgitation noted





Device was snared and pulled up to avoid blocking the coronary ostia

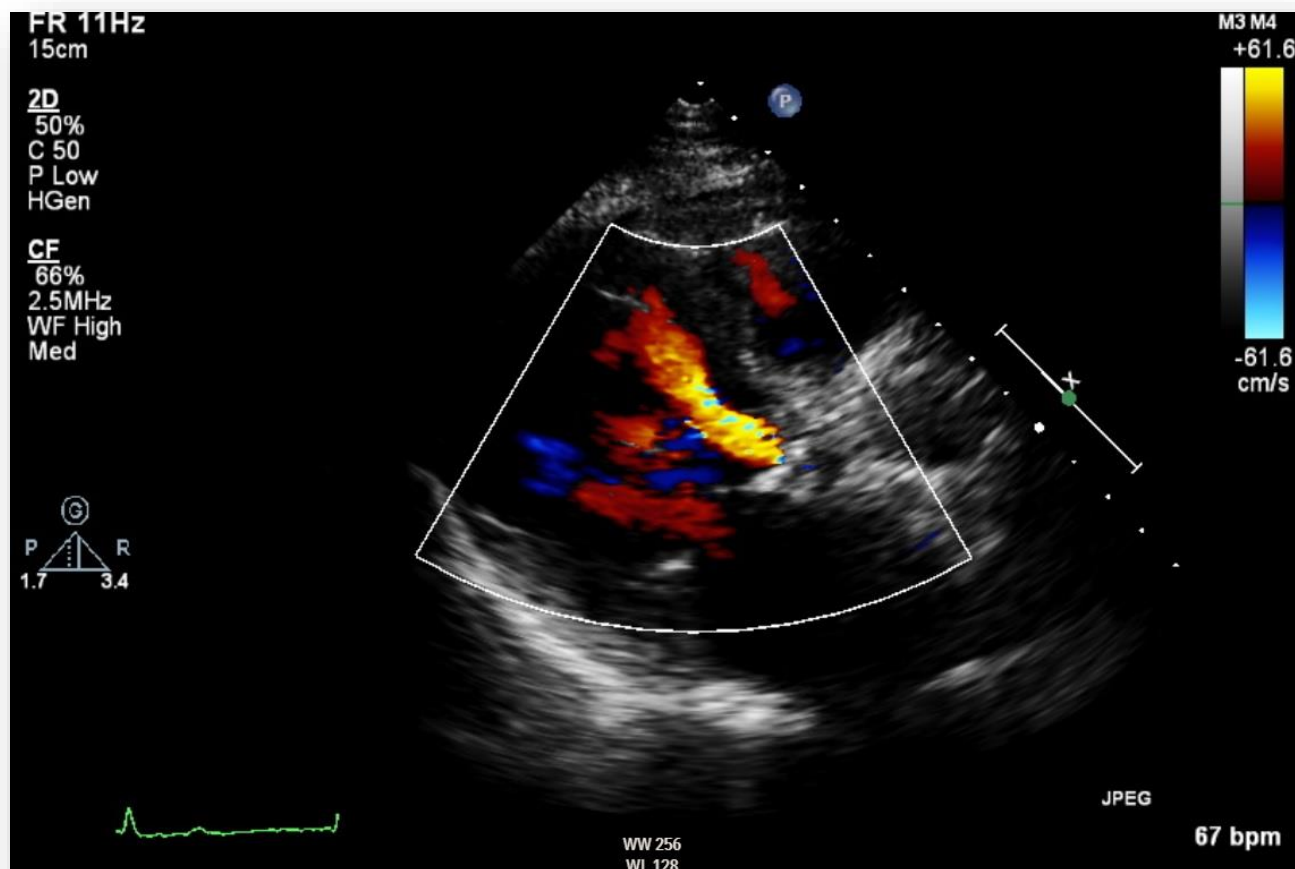
## Deployment of second TAVI device

Second device deployed inside the first device, in slightly lower position than the first device

Postdilation with 18mm, followed by 20mm balloon

Slight residual para-valvular leak





TAVI devices in situ  
Moderate paravalvular leak

- Discharged home 2 days post-TAVI
- Doing well
- Symptom free

- Challenges of a heavily calcified bicuspid aortic valve
- Increased risk of TAVI device popping out – aim for a lower position
- Consider predilatation to allow better TAVI expansion and annulus apposition
- Technical challenges faced with placing a second valve through the first
- Higher risk of coronary obstruction and paravalvular leak